

1. (canceled).
2. (Original) A recombinant protein, protein fragment or functional equivalent according to claim 1, that functions as an inhibitor of tryptase, preferably of human mass cell tryptase.
3. (Previously amended) A recombinant protein, protein fragment or functional equivalent according to claim 1 that contains one or more epitopes that can be used in the development of vaccines that target proteins that exhibit significant sequence homology with TdPI.
- 4-7. (canceled)
8. (Original) A recombinant protein derived from a blood-feeding arthropod ectoparasite that inhibits tryptase, or an active fragment of said protein or a functional equivalent of said protein.
9. (Original) A recombinant protein, protein fragment or functional equivalent according to claim 8, that functions as an inhibitor of tryptase, preferably of human mass cell tryptase.
10. (Previously amended) A recombinant protein, protein fragment or functional equivalent according to claim 8 that contains one or more epitopes that can be used in the development of vaccines that target proteins that exhibit significant sequence homology with TdPI.
- 11-15. (canceled)
16. (Previously amended) A recombinant protein, protein fragment or functional equivalent according to either of claims 1 or 8 that has been genetically or chemically fused to one or more peptides or polypeptides.

17. (Previously amended) A recombinant protein, protein fragment or functional equivalent according to either of claims 1 or 8 that is bound to a support, such as a resin.
18. (Previously amended) A pharmaceutical composition comprising a recombinant protein, protein fragment or functional equivalent according to either of claims 1 or 8, in conjunction with a pharmaceutically-acceptable carrier.
19. (Previously amended) A vaccine composition comprising a recombinant protein, protein fragment or functional equivalent according to either of claims 1 or 8, optionally in conjunction with an adjuvant.
20. (Previously amended) A process for the formulation of a pharmaceutical composition according to claim 19 comprising bringing said recombinant protein, protein fragment or functional equivalent into association with a pharmaceutically-acceptable carrier.
21. (Previously amended) A recombinant protein, protein fragment or functional equivalent according to either of claims 1 or 8 for use as a pharmaceutical.
22. (Previously amended) A method for the prevention or treatment of a disease in a subject, comprising administering to said subject an effective dose of a composition according to claim 18.
23. (Previously amended) A nucleic acid molecule encoding a recombinant protein, protein fragment or functional equivalent according to claim 1.
24. (Previously amended) A nucleic acid molecule having the sequence set forth in SEQ ID NO:1; which hybridises with said nucleotide sequence under stringent hybridisation conditions;

or which encodes on expression a recombinant protein, protein fragment or functional equivalent as defined in claim 1.

25. (Original) A vector comprising a nucleic acid according to claim 23 or claim 24.

26. (Original) The vector of claim 25 that is virus-based.

27. (Previously amended) A host cell transformed or transfected with the vector of claim 25.

28. (Original) A transgenic animal that has been transformed by a nucleic acid molecule according to claim 23 or claim 24.

29. (Previously amended) A method of preparing a recombinant protein, protein fragment or functional equivalent, comprising expressing a vector according to claim 25 or claim 26 in a host cell and culturing said host cell under conditions where said recombinant protein, protein fragment or functional equivalent is expressed, and recovering said recombinant protein, protein fragment or functional equivalent thus produced.

30. (Previously amended) A method for the detection or quantification of tryptase in a sample to be tested, comprising contacting said sample with a kit comprising at least one recombinant protein, protein fragment or functional equivalent according to claim 1, and other reagents for detection.

31. (Previously amended) A method for the treatment of inflammation in humans or animals comprising administering a therapeutically effective amount of a recombinant protein, protein fragment or functional equivalent according to claim 1.

32. (Previously amended) A method of vaccinating a mammal against a disease, or of treating a mammal suffering from a disease, comprising administering a recombinant protein, protein fragment or functional equivalent according to claim 1 to a said mammal.

33. (Previously amended) A tryptase inhibitor comprising a protein or protein fragment selected from the group consisting of bovine colostrum trypsin inhibitor, the rat tissue factor pathway inhibitor (TFPI-2), the Kunitz domain of the tick anticoagulant peptide TAP and the two domains in omithodorin.

Claim 34. (Previously added) A method for the prevention or treatment of a disease in a subject, comprising administering to said subject an effective dose of a composition according to claim 19.

Claim 35. (Previously added) A host cell transformed or transfected with the vector of claim 26.

36. (Previously added) A method for the depletion or removal of tryptase from a food product or from a cell culture comprising contacting the food product or cell culture with a quantity of a recombinant protein, protein fragment or functional equivalent according to claim 1.

37. (Previously added) The method of claim 36 wherein said recombinant protein, protein fragment or functional equivalent is bound to a support.

38-39. (canceled)

Please add the following new claims:

40. (New) The recombinant protein of claim 8 that exhibits significant sequence homology with

the tick-derived protease inhibitor protein (TdPI) sequence set forth in SEQ ID NO:2, an active fragment of said protein or a functional equivalent of said protein

41. (New) A recombinant protein or protein fragment according to claim 40, wherein said sequence homology is defined as 50% or more of the amino acids in the sequence being completely conserved as identical residues if the protein is aligned with the sequence of SEQ ID NO:2, the alignments being obtained using GCG's bestfit command (gap creation penalty = 2.5; gap extension penalty = 0.5).

42. (New) A recombinant protein or protein fragment according to claim 41, wherein said sequence homology is 60% or more.

43. (New) A recombinant protein or protein fragment according to claim 42, wherein said sequence homology is 75% or more.

44. (New) A recombinant protein or protein fragment according to claim 40 comprising the TdPI sequence.

45. (New) A recombinant protein or protein fragment according to claim 8 that inhibits tryptase with a  $K_i$  of less than  $1 \times 10^{-6}$  M, preferably less than  $1 \times 10^{-7}$  M, more preferably less than  $2 \times 10^{-8}$  M, most preferably less than  $1 \times 10^{-9}$  M.

46. (New) A recombinant protein, protein fragment or functional equivalent according to claim 8 that inhibits catalytic tryptase activity.

47. (New) A recombinant protein, protein fragment or functional equivalent according to claim 8 which inhibits mast cell tryptase, preferably human mast cell tryptase.

48. (New) A recombinant protein, protein fragment or functional equivalent according to claim 8, that is derived from a tick.

49. (New) A recombinant protein, protein fragment or functional equivalent according to claim 48, that is derived from the tick *Rhipicephalus appendiculatus*.

50. (New) An anti-tryptase agent comprising a recombinant protein, protein fragment or functional equivalent according to claim 8.

51. (New) An anti-inflammatory agent comprising a recombinant protein, protein fragment or functional equivalent according to claim 8.